Iron	Carbon Shafts			Steel Shafts A			Steel Shafts B		
	Length	Mass	Center of mass	Length	Mass	Center of mass	Length	Mass	Center of mass
	(mm)	(g)	(%)	(mm)	(g)	(%)	(mm)	(g)	(%)
#2	975	122.3	53.2	975	124.3	50.3	975	125.2	51.4
#3	965	121.6	53.0	965	123.9	50.0	965	122.8	51.0
#4	953	121.4	53.0	953	123.9	50.6	953	124.4	51.3
#5	940	120.9	53.0	940	123.3	50.3	940	123.7	51.0
#6	927	120.5	53.0	927	122.9	50.6	927	120.2	51.2
#7	914	120.3	53.0	914	123.3	50.5	914	117.3	51.0
#8	901	120.2	53.0	901	123.2	50.4	901	119.0	51.1
#9	889	120.2	53.0	889	122.2	50.4	889	114.8	51.1
#10	876	120.0	52.8	876	120.9	50.3	876	115.7	51.6

(Note) the center of mass (%) is calculated by dividing the distance from the tip of the shaft to its center of mass by the full length of the shaft.

FIG. 1

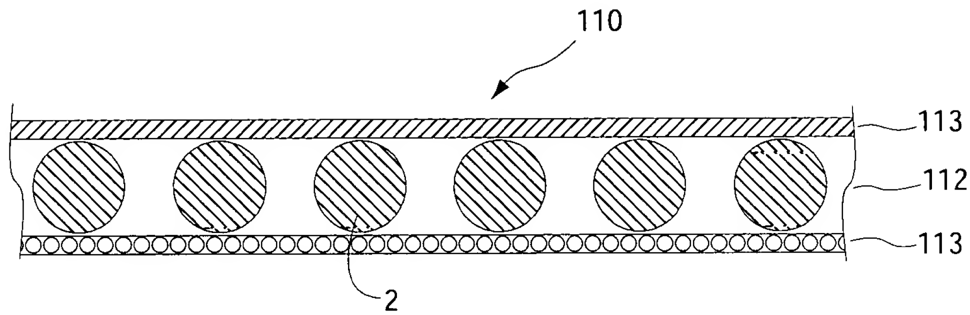

FIG. 2

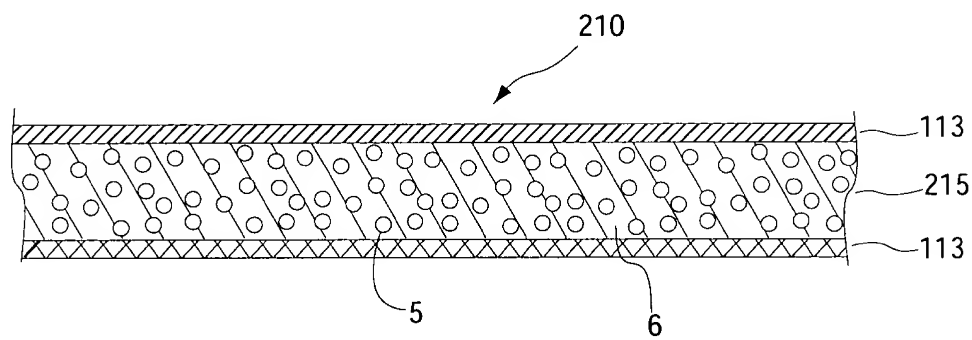

FIG. 3

Fiber Type	Specific mass (g/cm^3)	Thickness (μm)	Tensile Strength (Mpa)	Elastic Modulus (Gpa)
Tungsten	19.3	30~100	2940	412
Molybdenum	10.2	30~100	1960	333
Piano Wire	7.8	100	3038	196
Stainless Steel Wire	7.8	100	2624	176
Amorphous Alloy (Fe-Si-B type)	7.8	70~100	3626	157
Super-fine metal (Fe-C-Si-Mn type)	7.8	15~100	3920~5292	196

FIG. 4

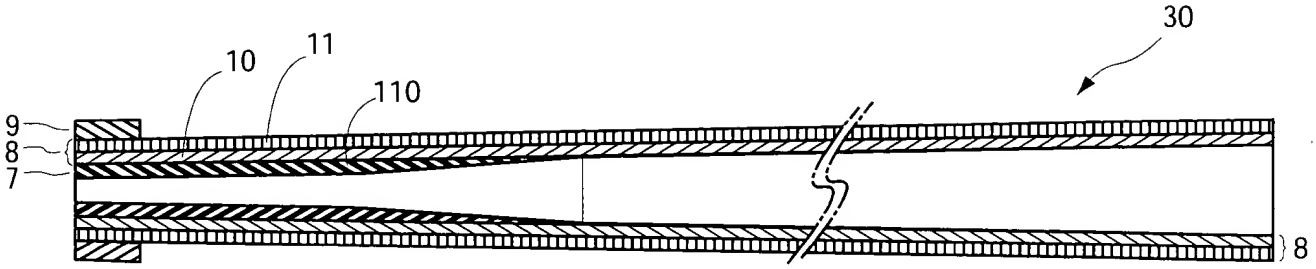

FIG. 5

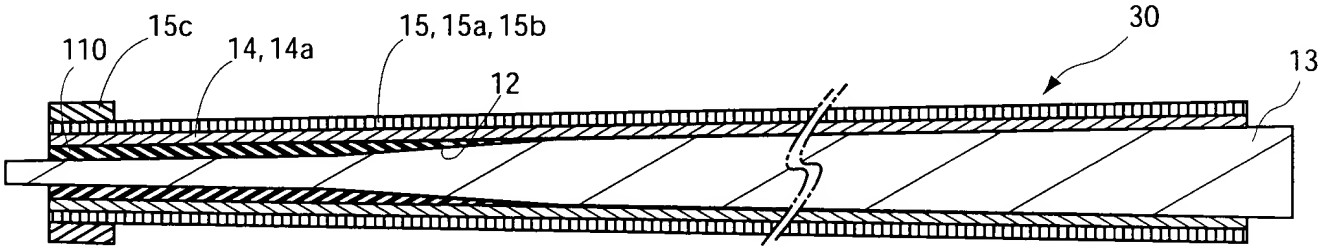

FIG. 6

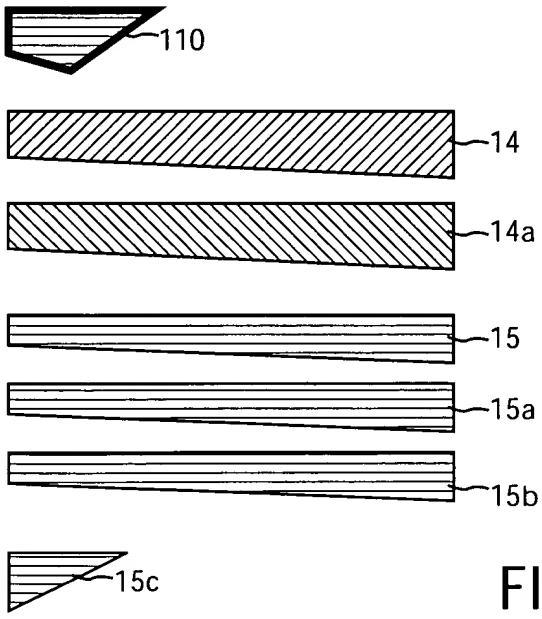

FIG. 7

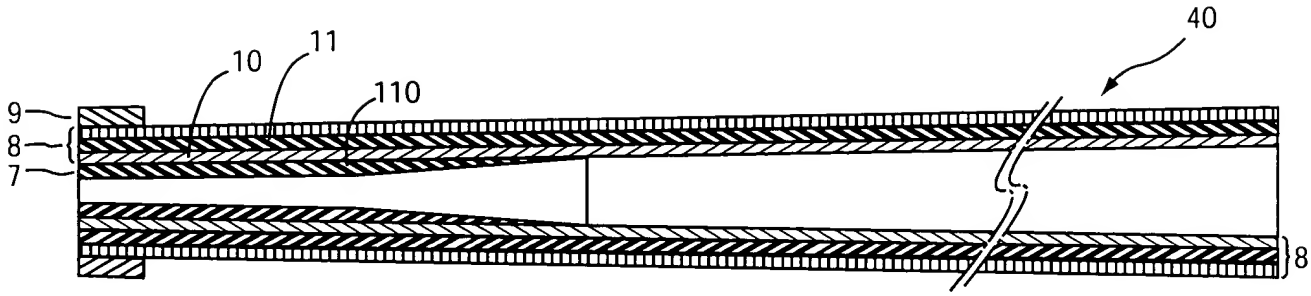

FIG. 8

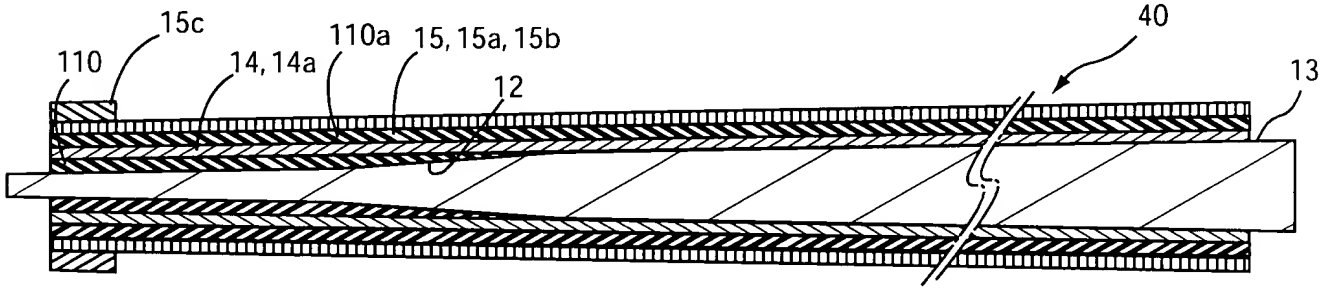

FIG. 9

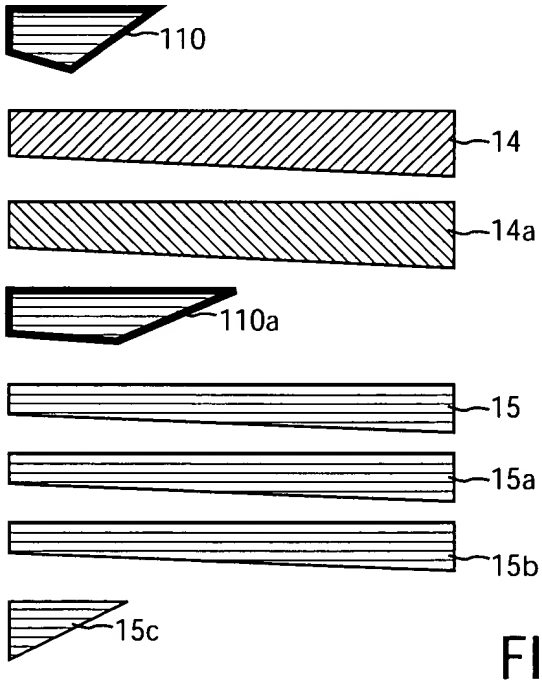

FIG. 10

	#	Mass (g)	Center of mass	EI Value	Outside Diameter (mm)
Example	1	120.6	49.4	3.70	11.53
	2	120.7	50.1	3.73	11.50
	3	120.6	50.3	3.68	11.52
	4	105.7	50.5	3.74	11.03
	5	96.1	49.3	4.12	10.99
Comparison Example	1	102.7	52.8	3.18	10.83
	2	11936	49.8	4.90	11.83
	3	123.1	44.4	4.06	12.36
Ref. Example	1	122.6	50.3	3.74	10.04
	2	124.5	50.8	3.32	10.01

FIG. 11

	#	Balance	Toe Down	Distance (yd)	Rt.&Lt. Deviation	Feeling	Overall Evaluation
Example	1	D1	1.5	178	1.2	4.5	4.5
	2	D1	1.5	180	1.4	4.2	4.0
	3	D1	1.4	176	1.8	4.3	4.0
	4	D0	1.6	1830	1.5	4.5	4.5
	5	D0	1.7	188	1.3	4.0	4.5
Comparison Example	1	D0	2.5	178	2.5	3.5	3.5
	2	D0	1.5	167	1.7	2.3	2.0
	3	D4	1.4	161	1.8	2.5	2.5
Ref. Example	1	D1	1.5	171	1.5	4.0	4.0
	2	D0	1.5	173	1.7	4.2	4.0

FIG. 12

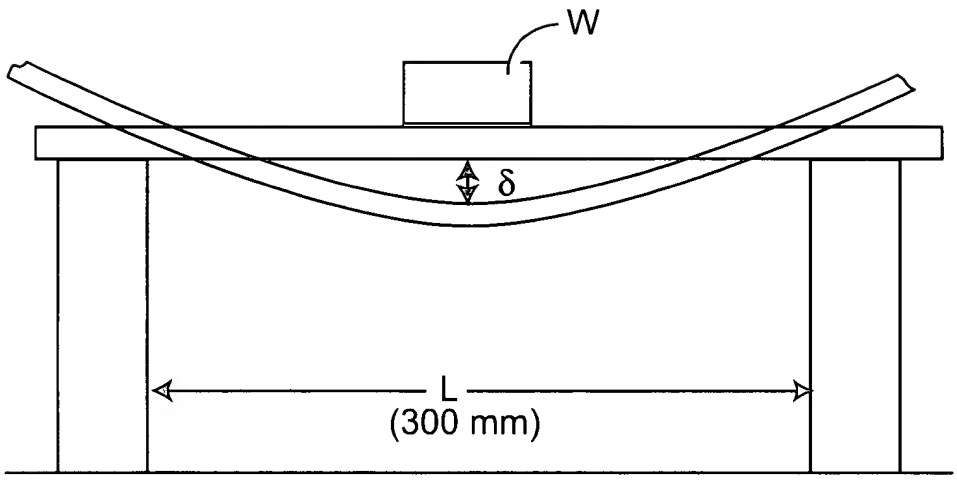

FIG. 13

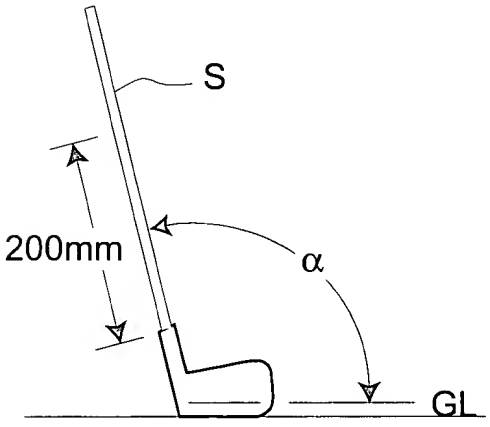

FIG. 14(a)

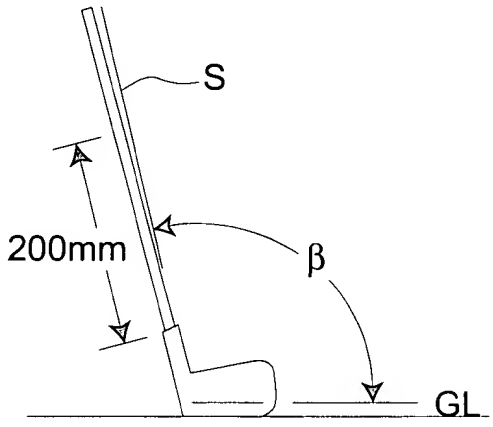

FIG. 14(b)